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November 3, 2006

Mr. Ken Hollingshead
National Marine Fisheries Service
Office of Protected Resources
1315 East West Hwy
Silver Springs, MD 20910-3282

Certified Mail
7003 1010 0002 2750 5029
Return Receipt Requested

**RE: Application for an Incidental Harassment Authorization
On Ice Geotechnical Operations Beaufort Sea, Alaska**

Dear Mr. Hollingshead:

ConocoPhillips Alaska, Inc. ("CPAI") proposes to conduct a small geotechnical survey program on ice in the Beaufort Sea, Alaska. CPAI hereby submits an Incidental Harassment Authorization application for a specified period (late March 2007 – April 30, 2007) within the proposed program. CPAI enlisted the support of Mr. Jay Brueggeman of Canyon Creek Consulting to compile biological information and to write a good portion of the application.

To minimize the environmental impact associated with submitting hard copies of other agencies' permit applications for this project, they are available electronically for your review at www.conocophillipsalaska.com/permits/. Please note the majority of permit applications will be available at a later date. If you have any questions or require additional information, please do not hesitate to contact me at the numbers or address listed above.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Charton', is written over a horizontal line.

Jason Charton
Senior Environmental Coordinator

Enclosure

Cc: Brad Smith – NMFS
Isaac Nukapigak – Kuukpik Corporation

**APPLICATION FOR INCIDENTAL HARASSMENT AUTHORIZATION
TO THE NATIONAL MARINE FISHERIES SERVICE
FOR
EARLY SPRING SITE CLEARANCE PROGRAM AT THE PIKE
PROSPECT
IN THE BEAUFORT SEA**

Submitted by ConocoPhillips Alaska, Inc.

November 2006

1. Description of the Specific Activity or Class of Activities that can be Expected to Result in Incidental Taking of Marine Mammals.

ConocoPhillips Alaska, Inc. (CPAI) is planning to conduct geotechnical portions of a site clearance survey just north of Cross Island, in spring 2007. The site clearance location will be on the Outer Continental Shelf (OCS) and State of Alaska leases. The operation will be active 24 hours per day and use a conventional geotechnical drilling rig. The project is anticipated to require about two weeks to complete between February 1-April 30, 2007, depending on weather and other operational factors.

Site clearance surveys are completed in order to confirm that the seafloor has soil and surface characteristics that will support the safe set-down of a drill rig, and long term occupation of the site by such a vessel, a geotechnical investigation is required using a small drill rig (Figure 1). The drill rig will run either 5' long augers for soil samples or 10' jointed pipe to recover core samples. Core sizes can vary up to about 4". The drill rig will use cone penetrometers for cone penetration tests. Sea water circulation and occasionally mud systems will be used on the drill rig to stabilize the hole. This work is part of an over-all shallow hazards investigation of the prospect.

The geotechnical program described below is consistent with what has been used by other Beaufort Sea exploration drilling locations. The geotechnical program will consist of the following components.

Soil Borings: Four (4) soil borings will be drilled in the area of the exploration well location. One of these borings will be 100-120 ft deep, and centered a proposed rig set-down location. Three (3) additional borings, all 60 ft in depth, will be phased 120° around the primary boring, and located on radials of 100 m. Soil samples will be taken in all borings at 3 foot intervals down to 30 ft, and at 5-ft intervals between 30 and 60 ft. Ten-foot sample intervals will be observed

below 60 ft. Samples will be taken in either thin wall tube samplers, or in split spoon samplers, as appropriate to the conditions.

Cone Penetration Tests (CPT): CPTs will be taken at up to six locations within a proposed rig footprint, and at up to ten (10) additional locations outside the footprint. The CPT's will be advanced at approximately 4 ft per minute. It is anticipated that the CPTs will not be advanced beyond 20 ft, in the event refusal is not encountered prior to that point. Cone tip resistance and sleeve friction will be continuously measured with load cells in the cone, and pore pressures will be made through a porous stone at the cone tip.

Seafloor Video: Seafloor video will be recorded from a camera lowered through holes drilled in the ice at selected locations. This coverage will be directed mainly at a proposed rig footprint area.

Support and Logistics: The geotechnical field program will be supported by rolligons, which has minimum impact on the sea ice and does not require building an ice road. The rolligon option is further preferred, as on-site work can be carried out continuously using two (2) twelve (12) hour shifts per day, and the work period is not daylight or particularly weather dependant. A rolligon supported program would utilize a sled camp located on grounded sea ice in the bight on the from the work site at 12 hour intervals. A rolligon supported program will require a total work force of eighteen (18) persons, including two lookouts for polar bears.

2. The Date(s) and Duration of Such Activity and the Specific Geographical Region Where it will Occur.

Field operations may begin on or about February 1, 2007 and be completed no later than April 30, 2007. CPAI anticipates completing work prior to the birthing season for ringed seal pups, but is applying for Incidental Harassment Authorization (IHA) as a contingency should work not be completed by the later part of March. It is estimated that approximately 14 working days on site will be required to complete the geotechnical objectives.

The geographic region of geotechnical activity encompasses two 13 km² (5 mi²) areas in the south central Alaska Beaufort Sea on the fast ice (Figure 2). The region is about 3 mi north of Cross Island at approximately 147° 57' W and 70° 32' N. There will also be a sea ice route directly from Deadhorse to the site, which will be about 24 km (15 mi) long and 0.01 km (35 ft) wide. The closest Eskimo village to the site clearance location is Nuiqsut, which is over 60 mi (96.6 km) away. Water depths are typically less than 60 ft (18.2 m).

3. Species and Numbers of Marine Mammals Likely to be Found within the Activity Area

The ringed seal is the only species of marine mammal managed by the National Marine Fisheries Service that may be present in the project area during the site clearance period. Ringed seals are not listed under the Endangered Species Act (ESA) or designated as depleted under the Marine Mammal Protection Act (MMPA). Other marine mammal species managed by the National Marine Fisheries Service (NMFS) that seasonally inhabit the Beaufort Sea, but are not anticipated to occur in the project area during site clearance operations, include the bowhead whale, beluga whale, bearded seal, and spotted seal. While some of these species begin to enter the Beaufort Sea off Point Barrow from the Chukchi Sea during April, the project area is over 160 nm east of Point Barrow, thereby making it highly unlikely these species would occur in the project area during the proposed operations. Polar bears and infrequently Pacific walrus also occur in the Beaufort Sea, but they are not addressed in this application, since they are managed by the U.S Fish and Wildlife Service.

A reliable estimate for the entire Alaska stock of ringed seals is currently not available. A minimum estimate for the eastern Chukchi and Beaufort Sea is 249,000 seals, including 18,000 for the Beaufort Sea (Angliss and Outlaw, 2005). The actual numbers of ringed seals are substantially higher, since the estimate did not include much of the geographic range of the stock, and the estimate for the Alaska Beaufort Sea has not been corrected for animals missed during the surveys used to derive the abundance estimate (Angliss and Outlaw, 2005). Estimates could be as high or approach the past estimates of 1-3.6 millions ringed seals in the Alaska stock (Frost 1985; Frost et al. 1988).

4. Description of the Status, Distribution, and Seasonal Distribution (When Applicable) of the Affected Species or Stocks or Marine Mammals Likely to be Affected by such Activities.

Ringed seals have a circumpolar distribution, which is closely associated with sea ice. Ringed seals are found throughout the Bering, Chukchi, and Beaufort Seas (Angliss and Outlaw 2005). They are the most abundant and widely distributed seal in the Beaufort Seas (King 1983).

Ringed seal densities are generally lower in the Beaufort Sea than reported in the eastern Chukchi Sea. Frost et al. (2004) conducted aerial surveys of ringed seals along the central Beaufort Sea, between 149°50' and 143°42'W within 40 km of shore; Cross Island is at about 148° W. Surveys were flown in 1996-1999 during late May and early June, when seals are most commonly hauled out on the ice. Based on their aerial survey counts, Frost et al. (2004) calculated ringed seal densities on fast ice to range from 0.57 to 1.14 seals/km². Observed densities ranged from 0.92 to 1.33 seals/km² on pack ice. During late May and early June

1997-1999, Moulton et al. (2002) surveyed ringed seals along the Beaufort Sea within a subset of (147°06' to 149°04.5'W out to 37 m offshore) of Frost et al.'s (2004) surveyed area. The overall observed ringed seal densities on fast ice ranged from 0.35 to 0.56 seals/km² (or 0.39-0.63 seals/km² in waters > 3 m deep), which was about 50% less than Frost et al.'s estimates. None of the estimates are corrected for missed seals (f(0) or g(0)). In all cases, ringed seal densities were much lower than in the eastern Chukchi Sea, where ringed seal densities averaged 1.91 seals/km² (range 0.37-16.32) in 1999 and 1.62 seals/km² (range 0.42-19.4) in 2000 (Bengston et al. 2005). The reported densities were consistently higher in the fast ice than pack ice in both the Beaufort and Chukchi seas. No data are available for seal densities in the fast ice during the proposed time of the site clearance operation in March.

During winter, ringed seals occupy fast ice and offshore pack ice of the Bering, Chukchi and Beaufort seas. In winter and spring, the highest densities of ringed seals are found on stable fast ice. However, in some areas where there is limited fast ice but wide expanses of pack ice, including the Beaufort Sea, Chukchi Sea and Baffin Bay, total numbers of ringed seals on pack ice may exceed those on fast ice (Burns 1970; Stirling et al. 1982; Finley et al. 1983). Ringed seals maintain breathing holes in the ice and occupy lairs in accumulated snow (Smith and Stirling 1975). Pups are born in late March and April in lairs that seals excavate in snowdrifts and pressure ridges. During the breeding and pupping season, adults on fast ice (floating fast-ice zone) usually move less than individuals in other habitats; they depend on a relatively small number of holes and cracks in the ice for breathing and foraging. During nursing (4 to 6 weeks), pups usually stay in the birth lair. Alternate snow lairs provide physical and thermal protection when the pups are being pursued by their primary predator, polar bears and Arctic foxes (Smith et al. 1991 *cited in* USDI MMS 2003). During summer, ringed seals are found on ice remnants and dispersed throughout open water areas of the Beaufort Sea (Burns et al. 1980 *cited in* USDI MMS 2003, Smith 1987).

The primary prey of ringed seals is Arctic cod, saffron cod, shrimps, amphipods, and euphausiids (Kelly 1988; and Reeves et al. 1992 *cited in* USDI MMS 2003). Ringed seals are a major resource that subsistence hunters harvest in Alaska (USDI MMS 2003).

5. The Type of Incidental Taking Authorization that is being Requested (i.e., Takes By Harassment Only; Takes by Harassment, Injury and/or Death) and the Method of Incidental Taking.

CPAI is requesting authorization for incidental taking by harassment (Level B as defined in 50 CFR 216.3) of small numbers of marine mammals between late March 2007 and April 30, 2007. The operations outlined in § 1 and 2 have the

potential to take very small numbers of ringed seals by harassment during the proposed timeframe. The rolligon supported drilling activities, should have no more than a negligible affect on the ringed seals for the following reasons. Rolligons will travel twice daily between Deadhorse and the site within a defined corridor principally absent of ice ridges, deformations, and other areas likely to support ringed seal lairs, and seal holes should not be affected by rolligons. No take by serious injury is anticipated, given the nature of the planned operations and the planned mitigation measures (see § 11, "MITIGATION MEASURES"). No intentional or lethal takes are expected.

6. By Age, Sex, and Reproductive Condition (if Possible), the Number of Marine Mammals (By Species) that May be Taken by Each Type of Taking, and the Number of Times such Takings by Each Type of Taking are Likely to Occur.

All anticipated takes would be "takes by harassment", involving short term, temporary changes in behavior. The mitigation measures to be applied will minimize the possibility of injurious takes. In the sections below, we estimated take or the numbers of ringed seals that might be affected during the proposed geotechnical drilling program. The estimates are based on the most recent data obtained during ringed seal surveys conducted within the geographic area of the planned operation by Moulton et al. (2002). The actual density during the geotechnical program may be lower, since surveys conducted by Moulton et al. (2002) were in May and June when seals may have been more concentrated in fast ice and pack ice remnants.

The estimated take of marine mammals is presented in Table 2 based on the density estimates in Table 1 and size of the project area including the travel corridor between the site and Deadhorse. The length (24 km-8 km=16 km) of the travel corridor associated with water depths greater than 3 m below the sea ice was included the analysis of take, since ringed seals typically do not occur in shallow water depths (Moulton et al. 2002). The width of the corridor was doubled (70 ft or 0.02 km) to account for adjustment of the corridor during the program due to any changes in ice conditions. The length (16 km) was multiplied by the width (0.02 km) of the travel corridor and added to the area planned for geotechnical drilling to obtain the total area for calculating take.

Table 1 Estimated density of ringed seals in the Pike Project Area during 2007 geotechnical site clearance operations

Species	Density (#/km ²)	Source
Ringed Seal	0.39-0.63	Moulton et al. (2002)

Table 2 Estimated take of ringed seals in Pike Project Area during 2007 geotechnical site clearance operation

Species	Density (#/km ²)	Project Area (km ²)		Total Estimated Take	Source of Density
		Site	Road		
Ringed Seal	0.39-0.63	26	0.32	10-17	Moulton et al. (2002)

The estimated take is likely to be considerably lower, since precautions will be implemented to reduce if not avoid take of ringed seals in the travel corridor. Ice conditions typically used by ringed seal to build lairs will be avoided when establishing the travel corridor for rolligons transiting from Deadhorse to the site. Rolligons require relatively flat ice conditions for travel, which are not typical ice conditions used by seals to construct lairs. Ice conditions for the two activities are normally incompatible.

7. The Anticipated Impact of the Activity on the Species or Stock

The proposed operation will have no more than a negligible impact on the species or stock. The estimated take represents less than 0.1% of the estimated stock size and even less of the available habitat. Reasons for such a small take are the very small size of the project area relative to the amount of ringed seal habitat in the Beaufort Sea, short duration of the geotechnical program (14 days) and location of travel corridor principally outside of habitat typically used by seals to construct lairs.

8. The Anticipated Impact of the Activity on the Availability of the Species or Stocks of Marine Mammals for Subsistence Uses

The proposed operation should have no affect on subsistence hunting. The primary subsistence village in the region is Nuiqsut, which is over 60 mi (96.6 km) away from the geotechnical operations. Most seal hunting by the village is off the Colville River Delta, between Fish Creek to the west and Pingok Island to the east ((Fuller and George, 1997). Seal hunting predominately occurs in the open water during summer, when seals are more readily accessible from small boat ((Fuller and George, 1997)). In 1992, Nuiqsut hunters reported harvesting 88% of the ringed seals during June through August, compared to 1% in March (Fuller and George, 1997). If a subsistence hunter is encountered in the project

area, actions will be taken to divert the rolligon away from the hunter, when ever possible.

9. The Anticipated Impact of the Activity upon the Habitat of the Marine Mammal Populations, and the Likelihood of Restoration of the Affected Habitat.

The proposed geotechnical operation will not cause any permanent impact on habitats and the prey used by ringed seals. All surface activities will be on sea ice, which will breakup and drift away following spring breakup. Any spills on the ice would be small in size and cleaned up before completing the operations. Similarly, all materials from the camp and drilling activities will be removed from the site before completion of operations. Areas containing ice conditions suitable for lairs will be avoided by the rolligons to prevent any destruction of the habitat. Drilling will have a negligible impact on the seafloor, since the bore holes will be small and widely spaced, and they will naturally fill in over time due to sediment movement by currents. The operation should have no effect on the prey of ringed seals, since most disturbances will be on the sea ice. Consequently, there will be no need for restoration of the habitat used by ringed seals.

10. The Anticipated Impact of the Loss or Modification of the Habitat on the Marine Mammal Populations Involved.

As mentioned in item # 9, there will be no loss and only temporary modification of habitat by the geotechnical operations. Temporary modification will be minor disturbance of the surface of sea ice from the placement and movement of the drilling rig, camp, and rolligons. Operations should largely occur in areas where sea ice conditions are not suitable habitat for ringed seal lairs. There will be no permanent structures to impact habitat.

11. The Availability and Feasibility (Economic and Technological) of Equipment, Methods, and Manner of Conducting Such Activity or means of Effecting the Least Practicable Adverse Impact upon the Affected Species or Stocks, Their Habitat, and on Their Availability for Subsistence Uses, Paying Particular Attention to Rookeries, Mating Grounds, and Areas of Similar Significance).

CPAI has incorporated a number of measures to mitigate any potential impacts to ringed seals from conducting geotechnical operations at the Pike prospect. These measures include the following:

- Confining the operations to a short period of time to greatly reduce ringed seal exposure to disturbance;
- Using rolligons to transport equipment and people to avoid building an ice road and their related potential affects on ringed sea habitat;

- To the maximum extent possible avoiding potential lair habitat along the travel corridor used by rolligons;
- Avoiding potential lairs by employing an Inupiat Hunter to identify potential lair locations should lair habitat be encountered during activities.
- Operating in early spring when there is little subsistence activity near the project site; and

In addition, there are no concentration areas for ringed seal or other marine mammals in the region of the project area. The measures combined with the actions described above should result in the operation having no more than a negligible impact on ringed seals.

12. Where the Proposed Activity Would Take Place in or Near a Traditional Arctic Subsistence Hunting Area and/or May Affect the Availability of a Species or Stock of Marine Mammal for Arctic Subsistence Uses, the Applicant Must Submit Either a Plan of Cooperation or Information that Identifies What Measures have Been Taken and/or Will be Taken to Minimize any Adverse Effect on the Availability of Marine Mammals for Subsistence Uses.

CPAI will meet with Nuiqsut representatives before commencing geotechnical operations in 2007. The meeting(s) will serve to fulfill the MMPA Plan of Cooperation requirement. The meeting(s) will provide information on the time, location, and features of the geotechnical operations, opportunities for involvement by local people, potential impacts to marine mammals, and mitigation measures to avoid or minimize impacts. The operations will be modified, where possible and practical, to reflect the concerns of the villages, hunters, and management agencies.

13. The Suggested Means of Accomplishing the Necessary Monitoring and Reporting that will Result in Increased Knowledge of the Species, the Level of Taking or Impacts on the Population of Marine Mammals That are Expected to be Present While Conducting Activities and Suggested Means of Minimizing Burdens By Coordinating Such Reporting Requirements with Other Schemes Already Applicable to Persons Conducting Such Activity. Monitoring Plans Should Include a Description of The Survey Techniques That Would Be Used to Determine the Movement and Activity of Marine Mammals Near The Activity Site(s) Including Migration and Other Habitat Uses, Such As Feeding.

The monitoring plan will be to map a proposed travel corridor between Deadhorse and the site that avoids, to the maximum extent possible, potential habitat for ringed seal lairs. As previously mentioned, an Inupiat hunter will be hired to visually locate potential lairs (and holes) in the travel corridor and work areas, which will be flagged, GPS coordinates taken and then delineated on the map. The Inupiat hunter may at times ride in the rolligon to assist the driver in avoiding

potential lair habitat and seal holes. Subsequent rolligon drivers will then use the map, pre-programmed GPS coordinates and/or flags to avoid potential lair habitat and holes when traveling the corridor and work areas. The completed map will be included in the final report submitted to NMFS after completion of the geotechnical project.

14. Suggested Means of Learning of, Encouraging, and Coordinating Research Opportunities, Plans, and Activities Relating to Reducing such Incidental taking and Evaluating its Effects.

The geotechnical site clearance project should have no more than a negligible effect on ringed seals as have been described in the sections above. The timing, mitigation, and operations of the project have been designed to minimize any disturbance to ringed seals. CPAI anticipates that data gathered from the project's mitigation measures, along with previously collected data, will lead to a greater understanding of seal breathing hole and lair distribution in the Cross Island area. By documenting habitat areas, future projects can be planned such that activities will minimize incidental take.

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